Kentucky Board of Registration for Professional Geologists

Kentucky Geologists

Volume 7 Issue 1 April 2005

Newsletter of the Kentucky Board of Registration for Professional Geologists

Mission
The mission of the Board of Registration for Professional Geologists is to regulate the public practice of geology in the Commonwealth of Kentucky to protect the citizens of the Commonwealth from negligent, incompetent, or fraudulent practices.

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As an agency of the Commonwealth of Kentucky, the Kentucky Board of Registration for Professional Geologists is solely funded by applicants and credential holders, and receives no tax dollars.

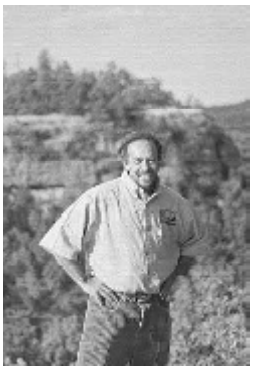
Geologist-in-Training Certification Becomes Law

The Kentucky Society of Professional Geologists (KSPG) and the American Institute of Professional Geologists - Kentucky Section (AIPG-KY), proposed a bill to amend KRS 322A to create a Geologist-in-Training certification. The amendment was the product of the hard work and initiative of a number of individuals. It was initially drafted by David A. Jackson, PG, Kentucky Department of Environmental Protection, Division of Waste Management, Superfund Branch who served as the committee chair for the Geologist-In-Training Standing Committee of KSPG.

The bill was sponsored by Senator David E. Boswell (D), Eighth District, and was introduced to the Senate as Senate Bill 141 on February 7th. Passage of SB141 would not have been possible without the help of Senator Gary Tapp (R), Chair of the Senate Licensing, Occupations & Administrative Regulations Committee who allowed the bill to be considered, and Senator Ernesto Scorsone (D) who shepherded the bill through the Committee hearings. Representative Denver Butler (D), Committee Chair, House Licensing, Occupations and Regulations Committee, and Representatives Reginald Meeks (D) and Ruth Ann Palumbo (D), each worked tirelessly to see that the bill passed on the opposite side of the chamber.

In summary, the bill zipped through both chambers, passing in the Senate 37-0 on February 17th, and passing in the House 93-0 on March 8th. It was signed into law by Governor Ernie Fletcher on March 18th. The amendment is the first statutory change since registration of professional geologists became law in 1992.

The newly passed amendment enhances the current law by clearly demonstrating to the public and potential employers those persons who have met the academic qualifications and passed the Fundamentals of Geology examination, and who are in the process of obtaining the required five years of work experience necessary before taking the Practice of Geology examination to become registered as a professional geologist in Kentucky. Of the 29 states and commonwealths, including the Commonwealth of Puerto Rico, that require licensure for geologists who work within their borders, over half have geologist-in-training certifications.



David Jackson, PG, Kentucky Department of Environmental Protection, Division of Waste Management, Superfund Branch.

Amendments to KRS322A enacted with the passing of SB 141 are presented on page 5, appearing in italicized, bold, underlined type.

IN THIS ISSUE …

Board Actions

Board Legal Actions

No actions were finalized since the last announcements.

Disciplinary Actions

No actions were taken since the last announcements.

New Registrants

Michael Dever (OH)
12/21/04
Kris Fields (KY)
12/21/04
Brad Milliman (KY)
12/21/04
Stephanie Weir (TN)
12/21/04
John Raymer (GA)
12/21/04
Brendan Merk (OH)
03/08/05
Larry Scusa (IN)
03/08/05

Exam Results
from October 3, 2003

Fundamentals of Geology

# Took Exam	# Passed
12	5

Practice of Geology

# Took Exam	# Passed
12	7

ASBOG Fundamentals of Geology Exam

At the national ASBOG held in November 2004, a decision was made to increase the exam fee from $125 to $150. This fee increase will become effective in the Spring 2006. Kentucky representative, Larry Rhodes, voted against this increase, but the motion passed.

Calendar

2005 Board Meetings

Next Meeting: June 6, 2005
Usual Meeting Dates: First Mondays of even-numbered months
Time: 1:30 p.m.
Location:
Division of Occupations and Professions
911 Leawood Drive,
Frankfort KY 40602

Note: **Dates are subject to change. Please call the Board Office, if you plan to attend.**

Kentucky ASBOG Exams

October Exam
Application Deadline: August 13, 2005
Exam Date: October 8, 2005

Council on Examiners Workshop
April 1 – 2, 2005
Columbia, South Carolina

ASBOG 2005 Annual Meeting
November 1 – 6, 2005
Portland, Maine

Complaint Review Committee Formed

At the February 7th meeting of the Board, a Complaint Review Committee was formed. The Committee is composed of two Board members and will be assisted by the Board Attorney, Mark Brengelman, JD, MA. The Committee, which will act as a "grand jury," will review any new complaints submitted to the Board and investigative information thereafter, if any, and bring its recommendations to the entire Board. The Board will then operate as a "jury" to determine whether further legal action is warranted against a Registrant under KRS Chapter 13B – the Administrative Procedures Act.

New complaints initiated will be assigned a number, with only the Board staff, attorney, and Complaint Review Committee members knowing the identity of the parties involved. The remainder of the Board will handle the Committee's recommendations by assigned case number and reference to the Committee's summary of the matter. The Board anticipates that the use of a Complaint Review Committee, a practice used by many boards and agencies, will further protect the integrity of the complaint-handling process. Use of the Complaint Review Committee will separate the initial investigative and review function of the Board from the Board's final decision-making function as to guilt or innocence.

Frequently Asked Questions

Question: Do activities related to the development of water supplies constitute the practice of geology as defined by state law?

Answer: Yes. As per KRS 322.010(1) and (3), the Board is of the opinion that groundwater investigations constitute the practice of geology. As specified under the law the "practice of geology" includes, in relevant part, the "performance of service to the public in connection with the geological description, *location*, or *evaluation* of earth materials, *liquids*, and gases, and the natural processes acting upon them." The practice of geology also includes the "study of minerals, gases, and *liquids* composing and contained within the earth's crust." (Emphasis added.)

Thus, it is the conclusion of the Board that the following activities related to the development of water supplies fall under the practice of geology as defined by state law:

- Developing springs as groundwater supply sources including their description, location and evaluation.
- Determining well and spring aquifer quantity and quality characteristics (e.g., pump test, sampling) including their description, location and evaluation.
- Monitoring surface water patterns and flow rates including their description, location, and evaluation.
- Geophysical surveys or any other surveys to map soil and bedrock conditions.

The New Madrid Seismic Zone: What is Kentucky's Risk?

Earthquakes have been in the news a lot recently, so it seems timely to ask — To what extent are earthquakes a risk in Kentucky? The answer to that question is dependent on a number of geologic factors, including earthquake magnitude, distance from epicenter, and local geology. Although our knowledge is insufficient to support the prediction of earthquakes, it does allow us to estimate risk for geographic regions. Such risk assessments are dependent on both observational data and assumptions.

Even moderate earthquakes, like the Sharpsburg earthquake of 1980 (5.2 on the Richter scale), can be costly. Damage from that event was estimated at about $3 million (Hanson and others, 1980). Of the seismic zones affecting Kentucky, the one with greatest potential for catastrophic damage is the New Madrid which is known to have produced at least three very large earthquakes and more than 1,800 aftershocks in 1811–12. Based on historical accounts we know the largest of these earthquakes occurred in the period from December 1811 to February 1812, and we estimate they each exceeded 7.5 on the Richter scale (Nuttli, 1973). Although the New Madrid is the most active seismic zone in the eastern and central United States, earthquakes are relatively infrequent, with only a couple of dozen earthquakes with magnitude greater than 4.0 being produced in the past 200 years.

Nonetheless, assessment of seismic risk and the consequences of those assessments on public safety, land use planning, and the state's economy are highly relevant. Current design ground motion for the Paducah area now dictates the area's development potential in several ways. For example, based on current risk assessment, the U.S. Department of Energy is precluded from obtaining a permit from federal or state agencies to construct a landfill for the Paducah uranium enrichment facility. In addition, should Kentucky adopt the 2000 International Residential Code (IRC-2000) without revision, the services of a design professional would be required even in the construction of residential structures in the Paducah area.

Although there is no question that western Kentucky has a relatively high seismic risk, the level of that risk is the subject of discussion. It may come as a surprise to residents of western Kentucky that current ground motion for seismic building design in the Paducah area is about 50 percent higher than that of any region in California (Wang and others, 2003). The design peak ground acceleration is about 0.6 g (g equals acceleration due to gravity which equals 32 ft/sec/sec) in the Paducah area (KBC-2002), compared with the highest design peak ground acceleration of 0.4 g in California (UBC-1997).

How can this be? Part of the discrepancy stems from the fact that the seismic risk assessment is based on both observational data and assumptions made in California. However, the geologic conditions in California differ significantly from those in the central United States (i.e., interplate vs. intraplate). For example, the deformation rate along the San Andreas faults

New Madrid Seismic Zone

exceeds 20 mm per year, compared with less than 2 mm per year along the New Madrid faults.

Current risk assessments stem from seismic hazard maps produced by the United States Geological Survey (USGS), which depict ground motion with two percent probability of being exceeded in a 50-year period, the industry-accepted life expectancy of most structures (Frankel and others, 1996 and 2002). Paleoliquefaction records suggest that large earthquakes, similar to the 1811–1812 New Madrid events, have been repeated on an average 500-year interval in the past 1,200 years (Tuttle and others, 2002). This frequency translates to an average 1 in 10 chance that a building might be affected by a major earthquake in western Kentucky in a 50-year period. However, associated with this risk is a high degree of uncertainty – i.e., the 500-year interval average has a standard deviation of 300 years. The magnitude of this standard deviation has no corollary in the western United States where earthquakes are frequent. There is considerable question as to whether the New Madrid Seismic Zone actually extends into Kentucky at all, much less all the way to Paducah (Wang, 2005). Considering the factor of uncertainty, the current risk assessment may place an unjustifiable burden on Paducah residents to reduce seismic risk. The role of the geologist in interpreting and communicating this uncertainty is essential to forming sound public policy and making informed land-use decisions.

Statewide, the Kentucky Geological Survey (KGS) maintains 18 seismic monitoring stations that record earth movement from the New Madrid Bend of the Mississippi River to Grayson in Carter County in eastern Kentucky. The University of Kentucky, together with the KGS, operates a strong motion

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The New Madrid Seismic Zone

Continued from Page 3

network of nine stations in remote areas of central and northern New Madrid Seismic Zone. To learn more about the seismic activity and earthquake hazards in Kentucky visit the KGS Web site at http://www.uky.edu/KGS/geologichazards/.

References

Frankel, A., C. Mueller, T. Barnhard, et al. 1996. *National Seismic Hazard Maps: Documentation June 1996*. U.S. Geological Survey Open-file Report 96-532. 110p.

Frankel, A., M. Petersen, C. Mueller, et al. 2002. *Documentation for the 2002 Updated of the National Seismic Hazard Maps.* U.S. Geological Survey Open-File Report 02-420. 33p.

Hanson, R.D., R.W. Anderson, G. Bollinger, et al.1980. Reconnaissance report, northern Kentucky earthquake, July 27, 1980: EERI, September 1980. p.69.

Nuttli, O. W. 1973. The Mississippi Valley earthquakes of 1811 and 1812: Intensities, ground motion and magnitudes. *Bull. Seism. Soc. Am.,* **63**:227–248.

Tuttle, M.P., E.S. Schweig, J.D. Sims, et al. 2002. The earthquake potential of the New Madrid seismic zone, *Bull. Seism. Soc. Am.*, **92**:2,080–2,089.

Wang, Z. (compiler). 2005. Better Understanding and Communication of the National Seismic Hazard Maps: Summary of USGS-KGS Meeting on Seismic Hazard Assessment in Western Kentucky. Kentucky Geological Survey, Ser. 12, Special Publication 7, 47p.

Wang, Z., E.W. Woolery, and B. Shi. 2003. Observed Seismicity (Earthquake Activity) in the Jackson Purchase Region of Western Kentucky: January through June 2003. Kentucky Geological Survey, Ser. 12, Special Publication 6, 16p.

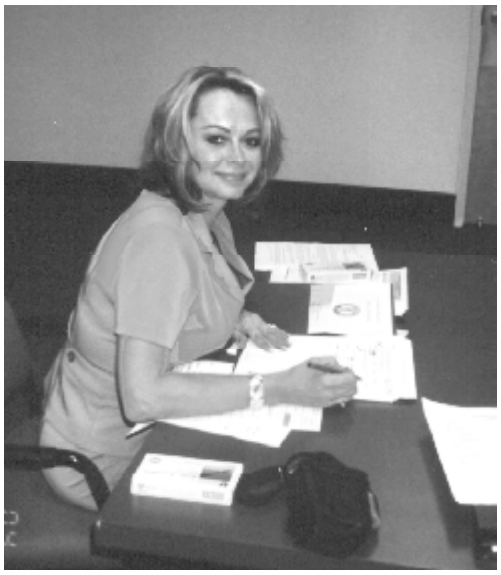
We have a new home on the Web!

The Kentucky Finance and Administration Cabinet recently revised their Web site. In the process, the Web site of the Board of Registration was given a new look! Please take time to visit us at http://finance.ky.gov/ourcabinet/caboff/OAS/op/progeo/.

Kentucky Energy Policy Released

On Monday, February 7th Governor Ernie Fletcher released the Commonwealth's first comprehensive energy plan entitled "Kentucky's Energy: Opportunities for Our Future." Full text of the plan is available on the Web at http://governor.ky.gov/NR/rdonlyres/494E5F9E-5277-4EAD-9B21-7F0CE5CA235E/0/CompositEnergyReport.pdf

Our Board Administrator Donna Solheim



Registration questions? Contact Donna:
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42nd Annual National Meeting American Institute of Professional Geologists

The 42nd Annual National Meeting for the American Institute of Professional Geologists (AIPG) will be held at the Radisson Plaza Hotel in downtown Lexington, Kentucky from October 8 – 13, 2005. The theme of this year's meeting is "Geologic Information: Racing into the Digital Age." Field trips to Mammoth Cave National Park, Natural Bridge State Park, and a day of horse racing at Keeneland are scheduled during the conference. See the AIPG Web site at www.professionalgeologist.org for more information. Email any questions to AIPG2005@yahoo.com, or feel free to call Tom Spalding, General Chairman, at (502) 458-1209.

Amendments Enacted to KRS322A with the Passing of SB 141

Amendments to KRS322A enacted with the passing of SB 141 appear below in italicized, bold, underlined type.

Section 1. KRS 322A.010 is amended to read as follows:
As used in this chapter, unless the context requires otherwise:
(1) "Geology" means the science which treats the earth as a whole; the investigation, analysis, classification, and location of the rocks and other materials which compose the earth's crust; the study of minerals, gases, and liquids composing and contained within the earth's crust; and the study of geologic materials and processes;
(2) "Geologist" means a person who is qualified by reason of his knowledge of the principles of geology, acquired by professional education and practical experience, to engage in the public practice of geology;
(3) "Public practice of geology" means the performance of service to the public in connection with the geological description, location, or evaluation of earth materials, liquids, and gases and the natural processes acting upon them. The "public practice of geology" does not include:
(a) The practice of engineering or land surveying as defined in KRS Chapter 322; or
(b) Design recommendations, design, or plans related to the practice of engineering or land surveying as defined in KRS Chapter 322.
(4) "Registered geologist" means a person who is registered as a geologist under the provisions of this chapter;
(5) "Qualified geologist" means a person who possesses all the qualifications specified in KRS 322A.040 for registration except that he is not now registered in Kentucky; and
(6) "Board" means the Kentucky Board of Registration for Professional Geologists.
(7) "Geologist-in-training" means an individual who has met the academic qualifications established by the board, who has successfully passed a written examination approved by the board demonstrating knowledge of the fundamentals of geology, and who has been enrolled by the board as a geologist-in-training.

Section 2. KRS 322A.040 is amended to read as follows:
(1) In order to qualify for registration, an applicant shall meet all of the following requirements:
(a) Successful completion of a minimum of thirty (30) semester hours or forty-five (45) quarter hours of course work in geology, culminating in a baccalaureate or advanced degree in geology, geophysics, geochemistry, or geological/geotechnical engineering from an accredited college or university. At the discretion of the board, courses dealing with applied geological science that are given under the auspices of an academic department other than geology may be considered toward the fulfillment of this requirement. During the twelve (12) month period beginning one hundred and eighty (180) days after July 14, 1992, the board may waive the education requirements for persons who derive their livelihood from the public practice of geology who do not meet the education requirements, but who can demonstrate to the satisfaction of the board their competency and who have at least eight (8) years of experience in geology.
(b) Five (5) years of experience in professional geologic work. Professional geologic work may include the instruction of geology at the college or university level, the geological research of persons at the college or university level, geological work performed while in the employment of the United States, state, or local governments. In counting years of experience, the board may give one (1) year of credit each for a master's degree or doctoral degree in geology, geophysics, geochemistry or geological/geotechnical engineering; and
(c) A passing score on an examination required by the board that has been designed to demonstrate that the applicant has the necessary knowledge and skill to exercise the responsibilities of the public practice of geology.
(d) Enrollment by the board as a geologist-in-training.
(2) During the twelve (12) month period beginning one hundred and eighty (180) days after July 14, 1992, the board shall waive the examination requirement for applicants qualified by education and experience as provided in subsection (1) of this section.
(3) Credit toward the experience and education requirements shall be subject to evaluation and approval by the board.
(4) Documentation of competency and integrity may be required by the board.
(5) Upon application, registration may be provided to those registered or certified as geologists in another state having standards at least equal to those provided in this section. During a twelve (12) month period beginning one hundred and eighty (180) days after July 14, 1992, registration may be provided to those holding a valid certification from the American Institute of Professional Geologists or the Division of Professional Affairs of the American Association of Petroleum Geologists.

Section 3. KRS 322A.070 is amended to read as follows:
(1) The board shall issue a certificate of registration, upon payment of the registration fee, to any applicant who, in the opinion of the board, has satisfactorily met all the requirements for registration under KRS 322A.040. Certificates of registration shall show the full name of the board. The issuance of a certificate of registration by the board shall be prima facie evidence that the person named

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Amendments Enacted to KRS322A with the Passing of SB 141

Continued from page 5

thereon is entitled to all the rights and privileges of a registered geologist while the certificate of registration remains in force.
(2) Each registrant may, upon registration, obtain and use a seal or stamp of registration of the design authorized by the board, containing the registrant's name and number and the legend "Registered Professional Geologist."
(3) A replacement certificate of registration may be issued, subject to the administrative regulations of the board, to replace any certificate lost, destroyed or mutilated.
(4) No person shall affix his signature or stamp, seal, or certify any reports or other documents after the certificate of registration of the registrant named thereon has been suspended or revoked, unless the certificate of registration has been renewed or reissued.
(5) The board shall issue a certificate of certification as a geologist-in-training to an applicant who pays the registration fee and who, in the opinion of the board, has satisfactorily met the requirements of Section 4 of this Act. Certificates of certification shall show the full name of the applicant and the full name of the board. The issuance of a certificate of certification by the board shall be prima facie evidence that the person named thereon has enrolled and is entitled to the rights and privileges of a geologist-in-training while the certificate remains in effect. The board shall determine the initial and expiration dates for the certificate.

SECTION 4. A NEW SECTION OF KRS CHAPTER 322A IS CREATED TO READ AS FOLLOWS:
The applicant for certification as a geologist-in-training shall demonstrate the following as evidence that he or she is qualified:
(1) Successful completion of a minimum of thirty (30) semester hours or forty-five (45) quarter hours of course work in geology culminating in a baccalaureate or advanced degree in geology, geophysics, geochemistry, or geological or geotechnical engineering from an accredited college or university. At the discretion of the board courses dealing with applied geological science given under the auspices of an academic department other than geology may be considered toward fulfillment of this requirement.
(2) A passing score on the board's examination in the fundamentals of geology. The board may allow students enrolled in the final year of an approved undergraduate program to take this examination. Upon passing the examination, the applicant may apply to the board to be enrolled amd receive a certificate as a geologist-in-training.

Kentucky Geologists is published semiannually by the Kentucky Board of Registration for Professional Geologists. The publication features topics relevant to the ethical practice of geology in the Commonwealth. Suggestions for the newsletter should be directed to Judith Hower, Communications Specialist, Kentucky Geological Survey, 228 Mining & Mineral Resources Building, University of Kentucky, Lexington KY 40506-0107, (859) 277-0777; FAX (859) 257-1147 <jhowe2@pop.uky.edu>.

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